



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,418	10/22/2003	Yixing Lin	008716	6173
61285 7590 08/11/2009 Ashok K. Janah 650 DELANCEY STREET, SUITE 106 SAN FRANCISCO, CA 94107			USA/CPS/IBSS/LAP	
EXAMINER				
MILLER, DANIEL H				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
08/11/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/691,418

Applicant(s)

LIN ET AL.

Examiner

DANIEL MILLER

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/4/2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-20, 23, 24 and 26-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-20, 23, 24 and 26-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 18-20, 23-24, 26-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al (US 2003/0185965A1) in view of Lin (US 2003/0026917A1), further in view of Garg (US 5,009,966).

It is noted that the claims examined are product by process claims where the examiner has interpreted the claims as pertaining to the article that is the final product of the process. The intermetallic compound is removed during applicant's claimed product by process and is therefore not present in the final product (see applicant's claim 18 (ii)).

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.", (In re Thorpe, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show

Art Unit: 1794

that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113).

Lin et al (US 2003/0185965A1)

Lin '965 teaches a substrate processing chamber component comprising: (a) a structure shaped to be a chamber enclosure wall, gas shield, cover ring or deposition ring, the structure made from stainless steel, aluminum, titanium, copper, copper alloy, quartz or aluminum oxide; and (b) a textured coating on the structure, textured coating: (i) made from aluminum, silicon, aluminum oxide, boron carbide or titanium oxide, and (ii) consisting essentially of substantially flower shaped surface grains that are sized from about 0.1 to about 5 micron (claim 20 Lin '965).

Given that the structure of the disclosed art and the claimed invention are substantially similar with both having substantially similar surface roughness (see table 1 Lin'965) and thickness [0052] with substantially similar deposition techniques [0051] they would be expected to have like physical characteristics, as claimed by applicant. No patentable distinction is seen.

While Lin '965 teaches a metal coating over the titanium coating it does not teach a titanium coating over the titanium substrate.

Lin (US 2003/0026917A1)

Lin '917 teaches a plasma-processing chamber including walls [0002, Lin '917].

The surface is bead blasted to create surface roughness [0040, Lin '917], creating enhanced bonding of a top metal layer. The surface roughness is within applicant's claimed range [0040 page 5]. The underlying structure can be aluminum and the coating can comprise titanium (claim 5 reference Lin '917).

The coating can be a twin wire arc spray coated layer (see [0043-0046]). The titanium comprising coating can be textured as well (see [0050] and figure 3 Lin '917).

Given that the structure of the disclosed art and the claimed invention are substantially similar and both undergo a bead blasting to a substantially similar surface roughness they would be expected to have like physical characteristics, as claimed by applicant.

Lin, discussed above, is silent as to the base material being titanium. However, in the only disclosed embodiment, Lin teaches, the gas shield 150 is made of aluminum coated with a thin layer of aluminum oxide [23]. Which is a metal base material (aluminum) with a like metal (aluminum) oxide coating. Since Lin also teach the chamber components can have a titanium oxide coating (claim 5 Lin '917).

3. Garg (US 5,009,966)

4. Garg teaches a titanium or titanium alloy substrate a hard metal coating to protect against oxidation (abstract) similar to the functionality of the both Lin references coating; and further demonstrates that one of ordinary skill would look to a titanium base material for use in an oxidation protective environment.

5. The substrate of Garg is further capable of refurbishment as claimed by applicant. No patentable distinction is seen.

1. It would have been obvious to use the titanium base material or outer coating as taught by Garg or Lin '965 and Lin '917 because of its inherent wear resistance valuable in applications of chamber construction and oxidation protection and to provide a like base metal material with like coating as taught to be preferred by Lin '917. Further, the like metals found in the base and coating necessarily aids in adhesion of the coating in high temperature environments (such as a chamber component). No patentable distinction is seen.

Response to Arguments

2. Applicant's arguments filed 5/4/2009 have been fully considered but they are not persuasive.
3. Applicant's arguments that the product by process analysis given in the rejection is not applicable to any claim but claim 18 are incorrect. It is noted in particular applicant is in error in classifying claim 35 as having no process limitations (remarks page 3 of 13). It is noted that applicant claims a "twin-wire arc sprayed metal coating" in claim 35, which is a process limitation. The product by process analysis applies to those claims including but not necessarily limited to independent claims 18 and 35, and is meant to

apply to those claims. Applicant is in error in asserting that there is a requirement for a separate rejection for non product by process claims.

4. Further regarding claim 18, applicant argues that Lin '917 does not teach titanium coating. However, it is noted that it claims a coating comprising titanium; which would include a titanium metal coating and that Garg also teaches a titanium outer layer. It would have been obvious to use the titanium base material or outer coating as taught by Garg or Lin '965 and Lin '917 because of its inherent wear resistance valuable in applications of chamber construction and oxidation protection and to provide a like base metal material with like coating as taught to be preferred by Lin '917. Further, the like metals found in the base and coating necessarily aids in adhesion of the coating in high temperature environments (such as a chamber component).

5. No patentable distinction is seen.

6. Regarding claim 20, applicant argues that the combination of Garg with Lin '917 would not result in the claimed component which has a metal coating that is on the titanium structure, because Garg teaches providing a noble metal interlayer between a coating and an underlying structure and further emphasizes that this interlayer is necessary to prevent spalling (page 10 of 13 remarks). The examiner sees several problems with this argument. First, the claims do not exclude an interlayer and secondly the use of an interlayer would not be necessary for "like materials" that do not have bonding issues as would have been known to one of ordinary skill in the art and finally the interlayer is not used in the combination of the references wherein the base

reference does not employ interlayers and titanium is substituted for titanium oxide. No patentable distinction is seen.

7. Regarding claim 24, applicant argues that the combination of Garg with Lin '917 would not result in the claimed component which has a metal coating that is on the titanium structure, because Garg teaches providing a noble metal interlayer between a coating and an underlying structure and further emphasizes that this interlayer is necessary to prevent spalling (page 11 of 13 remarks). The examiner sees several problems with this argument. First, the claims do not exclude an interlayer and secondly the use of an interlayer would not be necessary for "like materials" that do not have bonding issues as would have been known to one of ordinary skill in the art and finally the interlayer is not used in the combination of the references wherein the base reference does not employ interlayers and titanium is substituted for titanium oxide. No patentable distinction is seen.

8. Regarding claim 35, applicant argues that the combination of Garg with Lin '917 would not result in the claimed component which has a metal coating that is on the titanium structure, because Garg teaches providing a noble metal interlayer between a coating and an underlying structure and further emphasizes that this interlayer is necessary to prevent spalling (page 12 of 13 remarks). The examiner sees several problems with this argument. First, the claims do not exclude an interlayer and secondly the use of an interlayer would not be necessary for "like materials" that do not have bonding issues as would have been known to one of ordinary skill in the art and finally

the interlayer is not used in the combination of the references wherein the base reference does not employ interlayers. No patentable distinction is seen.

9. Regarding claim 37, applicant argues that the combination of Garg with Lin '917 would not result in the claimed component which has a metal coating that is on the titanium structure, because Garg teaches providing a noble metal interlayer between a coating and an underlying structure and further emphasizes that this interlayer is necessary to prevent spalling (page 13 of 13 remarks). The examiner sees several problems with this argument. First, the claims do not exclude an interlayer and secondly the use of an interlayer would not be necessary for "like materials" that do not have bonding issues as would have been known to one of ordinary skill in the art and finally the interlayer is not used in the combination of the references wherein the base reference does not employ interlayers and titanium is substituted for titanium oxide. No patentable distinction is seen.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 1794

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MILLER whose telephone number is (571)272-1534. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571)272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Miller

/JENNIFER MCNEIL/

Supervisory Patent Examiner, Art Unit 1794